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Computing schizophrenia: ethical challenges for machine learning in psychiatry

Recent advances in machine learning (ML) promise far-reaching improvements across medical care, not least within psychiatry. While to date no psychiatric application of ML constitutes standard clinical practice, it seems crucial to get ahead of these developments and address their ethical challenges early on. Following a short general introduction concerning ML in psychiatry, we do so by focusing on schizophrenia as a paradigmatic case. Based on recent research employing ML to further the diagnosis, treatment, and prediction of schizophrenia, we discuss three hypothetical case studies of ML applications with view to their ethical dimensions. Throughout this discussion, we follow the principlist framework by Tom Beauchamp and James Childress to analyse potential problems in detail. In particular, we structure our analysis around their principles of beneficence, non-maleficence, respect for autonomy, and justice. We conclude with a call for cautious optimism concerning the implementation of ML in psychiatry if close attention is paid to the particular intricacies of psychiatric disorders and its success evaluated based on tangible clinical benefit for patients.